Project 1

Due on Sunday, April 12

Points Possible: 100

**Description**: The following project description outlines the various requirements and specific point allocation for Project 1. Project 1 will require the use of the information learned in weeks 1-7. Project 1 will also strongly prepare oneself for the Midterm.

Project 1 models a mini casino game. You will have the option of selecting 2/5 of the casino possibilities, with options for extra credit. The casino games of choice are:

BlackJack

5 Card Poker

Craps

Roulette

Slots

**Grading**

You must code 2 out of the 5 games for full credit according to the specifications below. Point allocations are as follows:

40 % Game 1

40 % Game 2

20 % Miscellaneous, of which is broken down into

5 % Style

5 % Comments

10 % Menu-Based System

Extra credit is as follows

10 % One additional game

5 % Another additional game

5 % Coding a game not on the list

5 % Creating a flow chart for every game coded. No credit will be given if a flow chart is missing for every coded game.

You can earn extra credit only if all the other games have been programmed. The flowchart extra credit can be earned regardless of the amount of games programmed.

**Turn In**

Turn in will be one single main.cpp, one executable (.exe), and one README (a text file) in a zip file of the following format, FirstName\_LastName\_Project1.zip. A zip or 7zip if fine. The README must contain the following: First name, last name, section, date, and ID. Then, it must contain a description of your program, followed by what works and what does not work. **BE SEPCIFIC.** The amount of specificity will be discussed in class.

**Game Description**

The game to be played will be selected by the user using a menu-based system. The user should be able to continue playing individual games or choose to play a new game at any time. Each game has their own specifications. The user begins with a total of 100 chips (dollars).

The user’s chips carry over every game. As stated before, the user can opt to continue playing a game, or select a new game. The user’s chips should be displayed after every round, no matter what game is being played. The current amount of chips should be shown at the main menu also. After every new game is selected, whether it is a transition into a new game or a continuation of a game, the entire console should become clear. The console should also clear for every new menu prompt. These specifications fall under the menu-based system of the grade specifications.

**BlackJack:**

Blackjack is a game where the goal is to hit 21 through a combination of cards or have the dealer bust (over 21). Each number has its own face value (2,3,4,5,etc…) while a Jack, Queen, King has the value of 10. An ace can be represented as a 1 (hard) or an 11 (soft).

The user is dealt two cards and the dealer is dealt two cards. The user can select to hit (get another card) or stay (not get another card). The dealer must hit on a soft 17. For example, if the user has a 6 and A. The value is 17 and it is known as soft (as in the ace is represented by 11). The user can stay or get another card, in which the Ace may turn into the value 1, becoming a hard ace.

One the user chooses to stay, the dealer must then continue to hit until it has a hard 17 or higher. If the dealer has a higher number than the user, the user loses their initial bet. Otherwise, the user wins.

**5 Card Poker:**

The objective of 5 card poker is to have a winning hand. The user is given 5 cards. The user can select to exchange any number of cards from the current given hand. The user wins if a pair (two of the same card), three of a kind, 4 of a kind, two pair, or full house is within the current hand. No other hands are required.

**Craps:**

Craps is a game that takes place over two rounds. In round one, two dice are rolled. If the sum of the dice is either 7 or 11, you win your bet (known as the line bet). If it’s 2,3 or 12, you lose, otherwise known as craps. If it is any other number, the next round begins.

In round 2, two dice are rolled. If the roll is 7, all bets are lost. Otherwise, the rolls continue until the first number rolled is rolled again, winning the bet, and starting at round 1 again.

Additional functionally such as side bets, odd bets, and other bets are not necessary.

**Roulette:**

Roulette is a game in which a ball is revolving around a table, in which it will later land on a single number. Each number has a designated color, either black or red, while the zeroes are green. Color assignments and tables can be found online. The numbers range from 1-36, 0, and 00. The user can select a variety of bets.

The user can bet on a specific number, whether the number will be odd or even, a black or red bet (the color of the number), and a column or row of numbers. The row of numbers can be a single row, or a row of 18 numbers (6 rows), or a row of 12 numbers (4 rows). The user can only make any of these bets with whatever amount per spin. The winnings are as follows.

Single number bet 35:1

Column 2:1

6 Rows 1:1

4 Rows 2:1

Single Row: 5:1

Red/Black 1:1

Even/Odd 1:1

**Slots:**

Slots is a game of random chance. The slot machine will have 6 different shapes, characters, or symbols. A win is when a combination of symbols is on a single row, specifically the center row. There must be at least one symbol which acts like a wild, and one symbol that acts like a cherry. A cherry is a symbol that wins when there is 1, 2, or 3 of the symbol in a single row. Point allocations can be whatever you want, but must be scaled off the chances of the symbol. The wild symbol, for instance, must have half the chance of appearing than all the other symbols, but a combination of 3 wilds results in a large win. The winds should be a multiplier of the initial bet.

Every time a new round of slots is played, the screen should be cleared. The output of each slots game should be a row of dashes, a row of symbols equally spaced out, two more rows, and then a final row of dashes. Lastly, it should display a WIN!!!! Or a Lose!!!!, followed by the amount lost or won. Below is an example of how the output *should* look like.

**Output:**

Matthew’s slot game

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O P X

X X X

O I U

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WIN!!! 20 Credits

You have 120 Credits left over.